

## CLAIMS

What is claimed is:

1. An axle comprising:  
an axle housing;  
a cover having a generally dome-shaped portion having a first thickness, said dome-shaped portion terminating in a perimeter edge having a second thickness greater than said first thickness, said perimeter edge including a height greater than said first thickness, wherein said perimeter edge provides a weld surface; and  
a weld bead securing said perimeter edge to said axle housing.
2. The cover according to claim 1, wherein said second thickness is up to approximately twice said first thickness.
3. The cover according to claim 1, wherein said dome-shaped portion includes a plurality of reinforcing ribs protruding therefrom.
4. The cover according to claim 3, wherein said ribs are arranged radially about said dome-shaped portion.
5. The cover according to claim 1, wherein said dome-shaped portion includes a concave exterior surface, and said perimeter edge is a flange extending radially outwardly from said concave exterior surface.

6. The cover according to claim 5, wherein said flange is defined by a portion of said dome-shaped portion folded back onto itself.

7. The cover according to claim 6, wherein said weld surface is a machined circumference of said flange.

8. The cover according to claim 1, wherein said dome-shaped portion includes a recessed boss with an opening for receiving a carrier.

9. The cover according to claim 1, wherein dome-shaped portion includes a concave exterior surface with said perimeter edge defined by a terminal portion of said concave exterior surface.

10. A method of forming an axle housing cover, comprising the steps of:

- a) providing a blank;
- b) forming a dome-shaped portion having a first thickness; and
- c) forming a perimeter edge having a second thickness greater than the first thickness and the second thickness providing a weld height greater than the first thickness with the perimeter edge providing a weld surface.

11. The method according to claim 10, wherein step a) includes a hollow blank having a cavity with at least one hole through the blank into the cavity, and step b) includes hydroforming the blank to thin the blank to the first thickness.

12. The method according to claim 11, further including step d) cutting the blank in half to provide a pair of axle housing covers.

13. The method according to claim 10, wherein step b) includes forming a plurality of reinforcing ribs in the dome-shaped portion.

14. The method according to claim 10, wherein step c) includes folding a portion of the dome-shaped portion onto itself to form a flange extending radially outwardly from the dome-shaped portion.

15. The method according to claim 14, wherein step c) further includes machining a weld surface on the flange.

16. The method according to claim 10, further including step e) forming a recessed boss on the dome-shaped portion for receiving a carrier.

17. The method according to claim 10, wherein step b) includes stamping the blank.

18. An axle housing cover for securing to an axle housing comprising:

a generally dome-shaped portion having a first thickness, said dome-shaped portion terminating in a terminal end for engaging the axle housing, said dome-shaped portion including an outer perimeter edge adjacent to said terminal end and having a second thickness different than said first thickness, said outer perimeter edge lying within a boundary tangential to said dome-shaped portion immediately adjacent to said outer perimeter edge providing a weld surface for receiving a weld bead securing the cover to the axle housing.

19. An axle housing cover for securing to an axle housing comprising:

a generally dome-shaped portion having a first thickness, said dome-shaped portion terminating in a terminal end for engaging the axle housing, said dome-shaped portion including an outer perimeter edge adjacent to said terminal end without extending radially outwardly from said dome-shaped portion and having a second thickness different than said first thickness, said perimeter edge providing a weld surface for receiving a weld bead securing the cover to the axle housing.

20. The cover according to claim 18, wherein the second thickness is greater than said first thickness, said second thickness having a height greater than said first thickness.